2016

A Foliar Fungicide plus Herbicide Tank Mixture Evaluation in Field Corn in Nebraska, 2015

J. D. Harbour
University of Nebraska-Lincoln, jharbour2@unl.edu

T. A. Jackson-Ziems
University of Nebraska-Lincoln, tjackson3@unl.edu

CORN (*Zea mays* 'DKC 65-79 RIB')
Southern rust (*Puccinia polysora*)

J. D. Harbour and T. A. Jackson-Ziems
Department of Plant Pathology
University of Nebraska-Lincoln
448 Plant Science Hall
Lincoln, NE 68583-0722

A foliar fungicide plus herbicide tank mixture evaluation in field corn in Nebraska, 2015.

The objective of the trial was to evaluate the tank mixture of Laudis herbicide plus Stratego YLD fungicide for corn response. Irrigated corn was grown based on Nebraska Extension irrigation recommendations at the South Central Ag Lab near Clay Center, NE. Soils were a silt loam with 6.7 pH and 1.8 % OM and the previous crop was soybean. Reduced tillage was performed to the field prior to planting. Corn (DKC 65-79 RIB, tolerant to gray leaf spot (GLS)) was planted at approximately 34,000 seed/A on 26 May. Four treatments were arranged in a randomized complete block design with six replications. Treatments were applied using a CO2-pressurized backpack hand-boom sprayer. Treatment solutions were delivered with a 10 ft wide spray boom housing six TeeJet XR11002 spray nozzles with 20-in. spacing. Spray solutions were delivered at 3 mph with 40 psi compressed CO_2 for a spray volume of 20 gpa. Treatments were applied V4 on 20 Jun. Plots were assessed for phytotoxicity, stay green (14 Oct), and push lodging. Corn stalk lodging (push lodging) was assessed by pushing 20 random stalks, at shoulder height, to the 45° position. Plots were taken to yield from the center two rows using a Gleaner K2 plot combine (10 Nov). Grain yield was adjusted to 15.5% moisture. All treatments were analyzed using ANOVA, and means were separated using Fisher's protected LSD with $P = 0.10$. Precipitation was greater than normal in Jun (8.05 in. vs 2.9 in.), and 4.74 in. rain fell on 4 Jun. The longest rain-free period occurred from 20 Aug to 3 Sep. An overhead linear-move sprinkler irrigator delivered approximately 1.6 in. water to the trial on 18, 27, and 29 Jul, 17, 24 Aug, and 1 Sep. Average monthly temperatures (°F) were 72 (Jun), 76 (Jul), 73 (Aug), 72 (Sep) and 58 (Oct). The hottest month was Jul with a high of 97°F on 5 Jul. The longest consecutive days with temperatures >90°F occurred 31 Aug to 6 Sep. High temperatures at the R1 through R2 stage (29 Jul - 13 Aug) ranged in the low-80s (°F) and decreased to the mid-70s (°F).

Phytotoxicity was not observed from any fungicide treatment 6 DAT (6 Jun). GLS severity on this particular hybrid was negligible. Percent stay green and push lodging were not significantly different between treatments and the non-treated check. Yield differences were nonsignificant between treated plots and the non-treated check. Results indicated the tank mixture of Laudis herbicide plus Stratego YLD fungicide did not negatively affect corn.

Treatment, Formulation, Rate/A[z]	Corn Injury[y] %	Stay Green[x] %	Push Lodging[w] %	Yield, bu/A[v]
Non-treated Check	0 a[u]	23 a	42 a	260 a
Laudis 3.5 SC, 3 fl oz (V4)	0 a	21 a	39 a	270 a
Stratego YLD 4.18 SC, 2 fl oz (V4)	0 a	22 a	45 a	249 a
Laudis 3.5 SC, 3 fl oz + Stratego YLD 4.18 SC, 2 fl oz (V4)	0 a	19 a	48 a	253 a
P-value	0	0.4	0.842	0.1492
CV (%)	0	19.99	39.45	6.27

[z] Treatments were applied at V4 (20 Jun 2015).
[y] Corn Injury evaluated 6 Jun 2015.
[x] Stay green was determined by visually estimating the percentage of green foliage on each on leaf on 16 Oct 2015.
[w] Push lodging determined by pushing 20 random stalks, at shoulder height, to the 45° position (4 Nov 2015).
[v] Yield, where plots were harvested on 10 Nov 2015.
[u] Data followed by the same letter or without letters within the column are not significantly different at P=0.10 according to Fisher's protected LSD test.